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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,078	04/01/2004	Jeffrey T. Nadzam	LEEE 200414	7320
27885	7590	09/07/2006		
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			EXAMINER SHAW, CLIFFORD C	
			ART UNIT	PAPER NUMBER

1725

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/815,078

Applicant(s)

NADZAM ET AL.

Examiner

Clifford C. Shaw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1.) The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2.) Claims 1-3, 9-11, 17-19, 25, 26, 31, 32, 37, 38, 44-46, 49, 50, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (6,441,342, cited by applicant). Figures 1, 9 and 9B and the discussion at column 18, line 44 through column 20, line 39 in the patent to Hsu (6,441,342) disclose a welder and a method of welding with features claimed, including: generating a pulse waveform at element 40; detecting a short circuit on the basis of a voltage sensing circuit 36; clearing an undesired short circuit as shown in figure 9B whereby after a short circuit is detected, a “clear short” routine is implement at box 312 in the flow chart after which waveform generation is resumed at box 378 by starting the background current. The claims differ from the teachings of Hsu (6,441,342) in calling for a “circuit” to reset the waveform generator and in certain of the dependent claims, calling for sensing a short circuit only during the peak current portion or the background current portion. These differences do not patentably distinguish over the prior art. Although the “clear short” routine is disclosed as a box in a flow-chart in Hsu (6,441,342), it is considered obvious that this function is in some sense a “circuit” as claimed because the flow-chart function must obviously interact with the power supply through the agency of a circuit. In regard to the claim limitations directed to detecting a short on only the peak or the background current, the arrangement of Hsu (6,441,342) discloses detecting the short at both of these time periods (see the decision boxes at elements 310 following elements 373 and

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378 in figure 9B of Hsu (6,441,342)). It would have been obvious to have limited the detection to one or the other of peak and background current, the motivation being routine engineering consideration such as shortening the execution time of the figure 9B algorithm or simplifying this algorithm for certain welding situations by eliminating redundant short circuit checks.

3.) Claims 4-8, 12-16, 20-24, 27-30, 33-36, 39-43, 47, 48, 51, 52, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (6,441,342) as applied to claims 1-3, 9-11, 17-19, 25, 26, 31, 32, 37, 38, 44-46, 49, 50, 53, and 54 above, and further in view of Ihde (6,617,549). The only aspects of the claims to which the rejection above does not apply are: the provision for arrangements for clearing a short by increasing current flow; and welding with a shielding gas. These differences do not patentably distinguish over the prior art. At the time applicant's invention was made, it would have been obvious to have implemented the "clear short" routine in element 312 of Hsu (6,441,342) using any conventional approach. In particular, it would have been obvious to have used an increased current as claimed for the short circuit clearing, the motivation being the teachings of Ihde (6,617,549) that it is advantageous to clear an undesired short circuit by increasing current (see the abstract of Ihde (6,617,549)). It would have been obvious to have practiced the method of Hsu (6,441,342) with a gas shielded electrode as claimed, the motivation being the teachings of Ihde (6,617,549) that it is advantageous to include a short clearing process in a MIG, i.e., gas shielded, welding process (see the discussion of MIG welding at column 4, lines 21-26 in Ihde (6,617,549)).

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4.) Applicant's arguments filed 6/19/2006 have been fully considered but they are not persuasive. Applicant argues that "... Hsu does not teach or suggest resetting a pulse waveform, but instead proceeds to clear the short and then go to the background current state, which is not resetting the waveform" (page 10 in the "Remarks"). This argument is not persuasive. The output waveform in Hsu is periodic. The Hsu operation of interrupting the waveform and returning the output to the background current state is effectively an operation of resetting the waveform. The dependent claims that specify certain timing characteristics of short circuit sensing are considered obvious for the reasons set forth above.

5.) **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

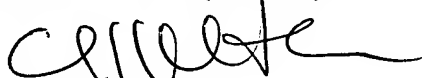
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication should be directed to Clifford C Shaw at telephone number 571-272-1182. The examiner can normally be reached on Monday through Friday of the first week of the pay period and on Tuesday through Friday of the second week of the pay period.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Patrick J. Ryan, can be reached at 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Clifford C Shaw
Primary Examiner
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September 2, 2006